TRAVELING GUN DESIGN WORKSHEET

RESOURCE INVENTORY:

Crops _____

Soils _____

AWC to rooting depth of crop _____ in

Maximum allowable intake rate _____ in/hr

Net moisture to be applied _____ in/irrigation

Peak consumptive use _____ in/day

Maximum allowable irrigation frequency _____ days

Water supply

Source _____

Amount available _____ gpm

Prevailing wind

Design speed _____ mph

Direction _____

SYSTEM DESIGN:

	No._____	No._____	No._____	No._____	No._____
Towpath spacing, ft					

Application efficiency _____ %

Gross application per irrigation _____ in

Sprinkler sets _____ /day

Operating time _____ hrs/day

Minimum system capacity _____ gpm

SPRINKLER SELECTION:

Trial	No.1	No.2	No.3	No.4	No.5
Sprinkler					
Nozzle size					
Pressure, psi					
Discharge, gpm					
Diameter, ft					
Sprinkler arc, W, degrees					
Application rate, in/hr					
Allowable spacing, ft					
Design spacing, ft					
Design application, in					
Travel speed, ft/min					
Towpath length, ft					
Travel time, hr					
Design sets per day					

Sets per irrigation _____

Travelers required _____

LATERAL DESIGN:

Hose type _____ (Lay flat, hard)

Length _____ ft

Size _____ in

Sprinkler pressure _____ psi

Riser height _____ ft/2.31 = _____ psi

Friction loss in hose _____ psi

Pressure loss in traveler _____ psi

Elevation ± _____ ft/2.31 = ± _____ psi

Total pressure required at riser _____ psi

MAINLINE DESIGN:

Material _____ , Length _____ ft

Q gpm	Dia in	Length ft	H_f psi

Total H_f = _____ psi

Elevation ± _____ ft/2.31 = ± _____ psi

Total mainline pressure loss = _____ psi

PUMPING REQUIREMENTS:

Pressure at riser _____ psi

Mainline loss _____ psi

Pumping suction loss _____ psi

Miscellaneous losses _____ psi

Total dynamic head, TDH = _____ psi

TDH x 2.31 = _____ ft

Required pump performance is _____ gpm at _____ ft with suction lift of _____ ft